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ABSTRACT

This study attempted to ascertain how incoming dental students initially defined selected aspects of their learning environment and how these definitions changed over a period of a year. Specifically, the study attempted to determine changes in student attitudes toward themselves, their faculty, their classmates, and their occupation. The subjects, 24 students at the School of Dentistry of the Medical College of Georgia, were administered questionnaires during orientation week at the end of the first semester and at the end of the second semester. Other research techniques included interviews, document analysis, and field observation. In terms of self-perception, the students moved toward a closer conceptualization of themselves as dentist by the end of the year. Very little modification took place in the students' perceptions of their classmates and faculty. The first year of dental training did, however, affect the students attitudes toward dentistry as measured by their perceptions of the important characteristics of a good dentist and their judgments of the disadvantages of dentistry. (AF)

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# THE PROFESSIONALIZATION PROCESS: AN ANALYSIS OF THE FIRST-YEAR DENTAL STUDENT*

Larry A. Platt, Roger G. Branch and Gilbert E. Johnson

In recent years professional education has become an area of increasing concern in the field of sociology. As part of this trend many studies have been done on the training of recruits for nursing, medicine, and law (Simpson, 1967; Davis and Olesen, 1963; Becker et al., 1961; Merton et al., 1955; Warkov, 1965; Lortie, 1959). However, relatively few projects have been undertaken with specific focus on the dental student. Of those studies that have been done, few have tried to describe the educational experience of the student from a comprehensive social-psychological point of view. Most have provided only piecemeal approaches that were short in duration and limited in scope. Furthermore, almost all of these investigations have been carried out at long-standing established schools of dentistry. Thus the current state of research in the field of dental education would appear to be

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insufficient in quantity and limited in nature. This condition is in marked contrast with the greatly accelerated demands for knowledge in this area. This paper will address itself to this problem by presenting the findings from the first-year of a six-year longitudinal research project at a beginning dental school. As such, this project seeks to provide a comprehensive social-psychological analysis of the dental students undergoing training at a dental school which is in its first year of operation. In view of the limited amount of information available concerning the training of dental students plus the atypicalness of the research setting, this study is primarily one of an exploratory nature.

In order to explore this needed area of research, the primary focus of this project is on the student and his interaction in the social milieu of the educational system. More specifically, this paper is concerned with the students' attitudinal perspectives, how they comprise a subjective set of orientations toward their educational experience, and how these attitudes change over the first year's time. In this sense, this paper seeks to explore the students' perceptions of their training rather than the faculties' or the administrators' viewpoints and is thus student-oriented in its outlook. The emphasis then is on how the incoming students initially define selected aspects of the learning environment and how these definitions change over a sequence of time. This perspective is shared by Quarantelli and others who felt that this framework was especially appropriate in that it

draws attention to what has been called the "professionalization process" (Quarantelli and Helfich, 1967; Sherlock and Morris, 1967; Olesen and Whittaker, 1968). Professionalization, as the term is used in this paper, refers to the socialization process within dental education whereby the student is influenced to define and redefine the social meanings of himself, those with whom he interacts, and his occupation in a manner acceptable to the occupational ideology perpetuated by the educational system.

In adopting this model, the present investigation seeks to examine the initial attitudinal perspectives of the students as they begin the process of developing and reformulating selected social meanings. The attitudinal perspectives to be presented in this paper fall into four major catagories: (1) attitudes of the students about themselves, (2) attitudes of the students about their classmates, (3) attitudes of the students about their faculty, and (4) attitudes of the students about their occupation. This catagorical scheme was adopted following an extensive review of the relevant literature which demonstrated the importance of each of these areas in previous research. These dimensions, however, are only analytically separate. In order to describe the students' occupational personality, a comprehensive survey of all four components must be simultaneously carried out. By observing the dental student in this manner, a more complete description of the neophyte can be obtained, thus making it possible to trace changes or reinforcements of entry perspectives.

In seeking to explore the nature of the research problem regarding the beginning dental students and their orientations toward themselves, their classmates, their faculty, and their occupation, four descriptive research questions were developed as investigative guidelines.

Question (1) What are the differences between the self-conceptions of the dental students at the beginning and the end of the first school year?

Question (2) What are the differences between dental students with regard to their attitudes concerning their classmates at the beginning and the end of the first school year?

Question (3) What are the differences between dental students with regard to their attitudes concerning their faculty at the beginning and the end of the first school year?

Question (4) What are the differences between dental students with regard to their attitudes concerning their occupation at the beginning and the end of the first school year?

The setting for the investigation of these four research questions was the School of Dentistry at the Medical College of Georgia (M. C. G.) which was in its first year of operation with dental students in residence. The school is a part of a larger medical college complex located in the same city; its facilities such as faculty offices, research labs, student lounges, lecture halls and teaching labs are interspersed throughout the whole medical college system.

The total dental faculty numbered forty, but only twenty-nine were actually engaged in activities which had an active influence in the student area of dental education. Ten of these twenty-nine members held full-time appointments, and the remaining nineteen held part-time appointments.

The total number of dental students in the first-year class was twenty-four. The class consisted of one female and twenty-three males. At the time of admission, the students ranged in age from twenty to thirty. Seven of the twenty-four students were married.

Although this was the first year of operation with students in residence, the school was originally established in 1966. During the developmental period from 1966 to 1969 the dental auxiliary utilization program, community dentistry program, and a clinical services program. Each of these programs and others like them had been incorporated into the curriculum of the dental students. The school also developed additional extramural programs, one of which was the cooperative sociology research program. This research program was designed to carry out a six-year longitudinal investigation through the joint-efforts of the School of Dentistry and the University of Georgia. The structure of the overall program was later modified to include the efforts of researchers at Georgia Southern College. Out of this program grew the current research project which is the subject matter of this paper.

Due to the lack of adequate guidelines resulting from the relatively insufficient base of knowledge about beginning dental students at new schools, this study is necessarily exploratory in nature. In keeping with the assumptions of the theoretical approach and the stated problem, the methods must be descriptive and social-psychological in focus. It was felt that in order to fulfill these criteria a multidimensional methodology was needed. Only in this way could a comprehensive survey of the dental student be possible. During the formulation of the research design, the author reviewed the methods employed in studies of health related education which were judged applicable to the current project (More, 1961; Quarantelli and Helfich, 1967; Sherlock and Morris, 1967; Rosinski, 1963; Hutton, 1968). From this review several quantitative indices which appeared to have special worth for this investigation were uncovered. Consequently, a few of these measures were incorporated into the project instead of constructing a totally new set of quantitative indices. This approach served to test the validity of those instruments that were suitable for adoption and served to yield findings more amenable to comparisons with the few student populations already studied. As mentioned earlier, many of the previous efforts have approached the study of the dental student in a segmented fashion and have carried out their research efforts as though the student lived in a partial vacuum. In order to overcome the limitations inherent in this type of approach, the

methodological design of this study sought to incorporate a number of qualitative techniques into the data collection plan. As such the investigation was structured so that not only before-after measures on formal scales but also observations of the ongoing process could be obtained. In this way, some comprehension of the processes of change and of reinforcement inherent in socialization can be understood. As a result of the needs of research in the area of dental students and in accordance with the theoretical assumptions of the present study, a methodology was designed which met six basic criteria: (1) that the design be exploratory, (2) that the design be descriptive, (3) that the design be longitudinal, (4) that the design adopt the perspective of the student, (5) that the design be social-psychological in focus, and (6) that the design combine qualitative and quantitative techniques.

In order to meet these six basic criteria, data were collected through the following techniques: (a) questionnaires, (b) interviews, (c) document analysis, and (d) field observation. The survey questionnaires were administered to both the dental faculty and the dental students. The questionnaires were administered to the students in three phases--an initial testing period given during the week of orientation, a second testing period given at the end of the first semester, and a third testing period given at the end of the second semester.

The faculty were administered selected subsets of the student questionnaires at the beginning and the end of the school year.

A series of semi-structured interviews was carried out with the faculty and the students in two seperate stages. The first interviews with the faculty were conducted in the month prior to the beginning of the school year. The first student interviews were carried out during the week of orientation before they actually began regular class work. The second set of faculty interviews were carried out during the first month of the second semester. The second set of student interviews were given during the second month of the second semester. The interviews for both faculty and students were approximately one hour in length.

Throughout the course of the research project a systematic collection of various documents was undertaken. Even though the documents came from different sources, they were all of the "expressive" type in that they described a process of personal or group development (Angell and Freeman, 1961). The documents which were collected were from three main sources: (1) the minutes of selected faculty and student meetings, (2) the student evaluation sheets for selected school programs, and (3) field diaires.

The final means of data collection was that of observation. Field observation techniques were employed over a ten month period of time at the research site. In general, two site

visits per week were made by the researchers in maintaining the collection of data through observation.

In view of the substantial amount of data collected during the initial phase of this investigation, only selected highlights from the findings will be presented in this paper. However, the information that will be discussed reflects the overall nature of the project's findings and as such constitutes a fair representation of the study's general conclusions.

In an effort to discuss the students' identification with the self-concept of dental student or dentist, the subjects were given a dental student to dentists continuum rating scale (See Table I). The students were asked to state in whole numbers where they felt they were and where they felt others saw them on this continuum. In the pre-test, the students placed themselves very close to a complete student identity. Their mean score was 1.173 on a possible 1-10 range where 1.000 equals total student identity. The faculty were seen as placing the students at the same point, 1.173. Students' non-dental friends were seen as placing them slightly higher, 1.565. Students' parents were judged as seeing students still a little more toward the dentist end of the scale, 1.821. Clinic patients, however, were judged as perceiving the students, 4.608. On the post-test the M. C. G. students placed themselves more toward the dentist end of the continuum in that their mean score was 3.047. The faculty were viewed as placing them slightly lower than their own assessments with a mean score of 2.739. Also,

the students' parents who were seen as evaluating the students higher than did non-dental friends in the first test period were now viewed as placing the students farther away from the dentist end of the continuum than did their non-dental friends. In the first and the last tests, clinic patients remained the group which were judged as perceiving the students to be the fartherest toward the identity of dentist. With a mean score of 6.695 in the post-test, clinic patients were seen as placing the students even farther toward the identity of dentist than in the pre-test.

Insofar as the students' self-identity is concerned then, the students clearly defined themselves as being more toward the dentist end of the continuum. Not only did the students see themselves as acquiring more of the identity of dentist, but they also perceived their parents, their non-dental friends, and the clinic patients as defining them more as dentists. Out of these selected groupings, the students perceived the faculty as assessing the least amount of advancement in the students' identity. They also perceived the clinic patients as assessing the greatest amount of advancement in developing the students' identity. Available data from Quarantelli and Helfich's study indicated that, in the main, the M. C. G. students scores revealed a pattern of more rapid self-conceptualization with the identity of the dentist than their sample (Quarantelli and Helfich, 1967).

The changes in self-identity among the students toward a closer conceptualization of themselves as dentists is a pattern well documented in the literature on professional socialization. Although a large portion of the students' move toward the identity of dentist can be accounted for by the widely recognized process of anticipatory role socialization, the structure of the M. C. G. dental program also offered another major influential factor. Specifically, the fact that the students at M. C. G. began working with patients within weeks of their arrival on campus instead of having to wait the traditional two-year period offered an increased opportunity for the enactment of the roles of the dentist. This opportunity for role enactment has been shown by Kadushin to be significantly related to the adoption of types of self-identities in professional training and may therefore constitute a variable fostering a change in the M. C. G. dental students' self-concepts appropriate to the roles being enacted (Kadushin, 1969).

In Table II the data regarding perceived dental student characteristics as judged by their fellow freshmen are presented. This data suggest that several features emerged as most predominate in the September pre-test and that very few changes occurred in this sphere of student attitudes during the first school year. In the initial testing the most salient student characteristics, in rank order, were that the students possessed (1) "a high intellectual ability,"

(2) "honesty and integrity in academic matters," (3) "a desire to make money," and (4) "a determination to become a dentist." In the last student testing phase, the same four traits were selected as most salient but in a slightly different order. A similar congruence of student responses in the first and third test phases appeared concerning the least applicable characteristics for their fellow classmates. Overall, the contrasting of the two test administrations indicated that the students felt that their fellow classmates did not possess an interest in art, music, national politics, world affairs, or philosophical questions and issues. Although there were only minor alterations in their perceptions over the year's time, they did see, by the end of the year, their classmates as possessing less intellectual ability, a greater determination to become a dentist, and an increased desire to make money.

The data concerning the dental students' attitudes toward their faculty revealed that most of the students conceptualized their instructors as being both teachers and dentists, who taught because they had a genuine desire to do so. In judging from a list of activities of what instructors should or should not do in their courses, again the September and the May scores were very similar with only slight changes in ranking (See Table III). In the main, the students felt both at the beginning and at the end of the school year that the three major activities instructors should do in the classroom. The students felt that instructors should (a) "make an

effort to become personally acquainted, insofar as that is possible, with the students in their courses," (b) "give detailed guidance on what students should emphasize in studying," and (c) "grade on performance rather than effort." In the pre-test the students agreed that instructors should avoid "lecturing more or less directly from the text of the course." However, in the post-test the activity judged the most undesirable was for instructors to "discuss in the classroom their own research."

Based upon the information gained through the initial faculty and student interviews, the degree of congruence between the students' pre-test and post-test responses concerning teacher activities can, in part, be attributed to the existence of a unified set of normative expectations governing classroom behavior. Specifically, the decision-makers within the dental school established a guideline for didactic instruction. This guideline encouraged a less formal and a less socially distant student-teacher relationship, a planned curriculum with detailed lecture sequences, a grading system based on performance rather than effort, and a development of seminar teaching situations. When the faculty were hired, their abilities to function under these guidelines were a chief criterion. Students were likewise informed of these policies in their entrance application interviews. Thus the administration of the school clearly made known to the faculty and the students

their expectancies regarding student-faculty relationships Since the school so strongly endorsed these definitions, it was not surprising that the students' views in September were accurate perceptions of the school's policies; nor was it surprising that they had come to define these activities as acceptable. As Olesen and Whittaker pointed out, the process of professionalization is, in part, a matter of the neophytes defining and redefining various aspects of their learning environment under the influence of various referents (Olesen and Whittaker, 1968). Following this perspective it is probable that the normative structure of the dental school served to foster the unanimity noted in the students' pre-test and post-test scores concerning what instructors should or should not do in the classroom. Also, it would appear that experiences in class served to increase two-fold the opposition to faculty members "discussing in detail their own research in the classroom."

In seeking to gain insights into the students' attitudes about their occupation two particular measures were especially revealing. These measures were the students' descriptions of the important characteristics of a good dentist and the students' judgments of the disadvantages of dentistry. In the initial testing several characteristics were judged by the freshman dental students to have importance for being a "good" dentist, (See Table IV). The most agreed upon attributes that a "good"

dentist should possess were "high ethical standards" and a "strong dedication to dentistry." To a somewhat lesser degree the characteristics of "ability to handle people" and of the "recognition of one's own limitations" were also judged to be pertinent to being a "good" dentist. The characteristic considered to be the least necessary for being a "good" dentist was an "interest in writing professionally." Also considered relatively non-essential to being a "good" dentist were a "good research ability," "an outgoing and extroverted personality," and "dignified appearance and mannerisms."

In the final M. C. G. testing the students ranked as most important the characteristics of having (1) "a recognition of one's own limitations," (2) "an ability to handle people," and (3) "high ethical standards." The M. C. G. post-test responses also indicated that the characteristics judged least essential were (1) "scientific curiosity," (2) "a high intellectual ability," (3) "an outgoing personality."

The changes in the first and third student test data seemed to suggest that many of the changes in choices of important characteristics were related to the more accurate formulation of perceptions among the students as to the roles of the dentist and the most essential attributes needed to perform these roles. In the initial student interviews the students were asked what types of activities they would be performing when they became dentists. The responses to this question indicated that the students were cognizant of only the treatment roles of the dentist and did not have a full

working knowledge of the broader role-set of the dentist. For instance, the students frequently did not mention the managerial roles or the roles as a referral source. Thus, the incoming students were not cognizant of the full compliment of activities the dentist performed. However, as part of the school's program of community dentistry, activities were arranged such as field trips to local dentists' offices and early clinic experiences working with patients. These experiences were designed to familiarize the student early in his training with the functions of the practicing dentist. Observations were made of these events and the information derived from these observations suggested that the students did gain a more accurate perception of the dentist's roles. In reviewing the areas of change in the students' post-test scores relative to the characteristics judged most important to being a good dentist, many of the items that assumed new importance in the students' evaluations were ones which could be attributed to increased student awareness of the dentists' roles. Specifically, the increased positive evaluation of "skillfull management of time," "good technical skills," and "recognition of one's limitations" are primarily task-oriented in nature.

In evaluating the unfavorable consequences of dentistry, the most salient disadvantages cited by the students on a Likert-type rating scale were as follows: (1) the heavy cost of the initial investment in setting up the practice

of dentistry, (2) the potential hazards to health involved in practicing dentistry, (3) the lack of appreciation by patients of the non-mechanical skills of the dentist, and (4) the physically demanding hard work involved in standing for a long time, (See Table V). Twenty-two out of twenty-three students did not feel that working with people was at all a disadvantage to the profession. Twenty felt that the necessity of working around blood was not an unfavorable consequence of the dental profession. A somewhat smaller number, though still a majority, did not feel that working in the oral region of the body or having to inject needles into people were decided disadvantages of dentistry.

In May the M. C. G. students indicated a change in their judgements regarding the unfavorable consequences of dentistry and evaluated the three most salient disadvantages of dentistry, in rank order, as being (1) "the heavy cost of the initial investment in setting up practice," (2) "the lack of appreciation in patients on the non-mechanical skills of the dentist," and (3) "the physically demanding hard work involved in standing for a long time." The items students judged as least constituting a disadvantage for dentistry were very similar in the pre-test and the post-test data and were mostly a matter of minor ranking differences. Even so, there was a lowering of three ranks from the pre-test to post-test in defining the task of injecting needles into people as a disadvantage for dentistry.

In reviewing the overall changes in the students' pre-test and post-test scores, the data suggested that some of the changes in student responses reflected a modification in the orientations of the students. Specifically, a number of changes in the response patterns of the students may be related to their clinic experiences and to their patient experiences. Continued observations of the dental clinic indicated that the students were redefining their views of dentistry as they began to enact more of the roles of the practicing dentist. These redefinitions were viewed as being largely changes toward more realistic assessment of the functions of the dentist. If these observations were accurate, there should be some redefinition of the field of dentistry in terms of a more realistic dental practice reflected in the other sources of data. As the fluctuations in the pre-test and post-test responses of students concerning the disadvantages of dentistry were examined, the changes seemed to be related to modifications in orientations. The new orientations were related to the variables concerning the actualization of the dentist's roles.

Changes in the students' conceptions about the disadvantages of dentistry were, in part, influenced by students' clinic experiences. Evidence for this conclusion was suggested by the redefinition of the following items during the year: (a) "The lack of appreciation by patients of the non-mechanical skills of the dentist," (b) "the physically demanding hard work

involved in standing for a long time," and (c) "the thinking by people that the dentist is not much more than a mechanic." Also, the redefinition in the post-test of "having to inject needles into people" as less of a disadvantage than in the pre-test also offers some support to the field observations. Thus, the changes in the students' definition of some task-related items, as noted in the pre-test and post-test scores on the disadvantages of dentistry scale, may be influenced by the students' activities in the school clinic. As the students first encountered the patients, they confronted as dentists the hardships of dental practice and the attitudes of the general public toward dentistry. To the extent that their perceptions in September of dentistry were incongruent with the realities experienced in the clinic, the students were influenced to redefine their perceptions. The changes in the scores on the disadvantages of dentistry scale appear to suggest that such changes were influenced by this process of redefinition.

In sum, changes did occur in the M. C. G. students' attitudes concerning themselves, their classmates, their faculty, and their occupation. However, in many cases, such as students' attitudes concerning their classmates and their faculty, very little actual modification took place. Even so, other spheres of attitudes such as students' self-identity and students' perceptions of the disadvantages of the profession underwent relatively dynamic alternation.

The major implication of these findings seems to be that indeed the first year of dental training did effect changes in student attitudes. Moreover, the influence of the structure of the dental program at M. C. G., in general, and the early exposure to the patients and the clinic, in particular, seemed to have acted as distinctive modifying elements within the social milieu of the professionalization of dental students.

As previously stated, the primary focus of this study was on the dental student's attitudinal perspectives at the beginning and at the end of the first school year. These perspectives comprised a subjective set of orientations toward the student's educational experience. Due to the relatively insufficient base of knowledge about the attitudes of freshman dental students, a research design which was primarily exploratory in nature had to be formulated. Although this approach was best suited for the beginning phase of a longitudinal research program, the initial data output concerning the relational aspects of student attitudes and the interrelation of these attitudes with patterns of student behavior was somewhat limited. As a result, this study, by its design, has excluded several meaningful issues from its boundaries of concern. On the other hand, it cannot be overlooked that as part of a larger research design the methodological procedures utilized in this investigation have demonstrated substantial adequacy in dealing with the problem and have generated the necessary baseline information desired in an exploratory effort.

The unique setting of this project as well as the opportunities for studying the development of student attitudes have also been discussed. Indeed, the advantages of carrying out the sociological enterprise in the midst of an emerging dental school were many, but there were also limitations. Not the least of the unfavorable consequences of dealing with the first dental class at a medical college was the reduced number of the respondents. The fact that only twenty-three respondents were available for use in the study imposed severe limitations on the type of mathematical operations that were employed in the analysis and presentation of the data. Even so, the limited number of respondents made possible a more intensive study of each student and enabled the entire student population to be incorporated into the research endeavor.

The findings presented in this paper have served to raise a number of issues relative to the processes by which the dental students come to define and to redefine the selected meanings comprising their subjective set of oreintations toward their educational experience. These implications might best be reviewed from a problem-oriented perspective with the focus being placed on generating meaningful research questions pertinent to the professionalization process.

Quarantelli and Cooper and others have suggested that it is the perceived rather than the actual responses of others that are the more important in the formulation of the

self-conceptions of dental students (Quarantelli and Cooper, 1966). If this is so, what effect does the existence of the perceived dissimilar judgements of others regarding the dental students' identity have on the students undergoing professional school training? Is there any relationship between the congruency of students' perceptions of others' evaluations of themselves and academic success, or dissatisfaction and attrition in school? Also, is there any association between the acquisition and the development of professional orientations and the congruency of students' perceptions of others' evaluations of them? How the dental students resolve these differing perceptions and the mechanisms which facilitate or impede this resolution may prove to be very important for the study of professionalization.

The results of this investigation have suggested at several points that some of the changes in the students' attitudes during the first year may be linked with their exposure to patients and to the clinic setting. Kadushin has documented that where the school has structured greater opportunities for role enactment, the students' acquisition of the professional model was markedly increased (Kadushin, 1969). Since the students at M. C. G. were being trained under a program which allows them to have clinic experience approximately two years earlier than the traditional dental school curriculum, the influence of this increased patient contact on their professional training may be of considerable consequence.

This program may have meaning for the questions of how early patient contact is related to the acquisition of the dentist role model and what effect this has on students' later conceptions of patients and of treatment processes. Moreover, there is the question--Does early adoption by students of the professional role model impede the maintenance of the student role and does it have deliterious effects on rates and quality of student learning?

Previous investigators have indicated that discrepant expectancies among students about what professional education may be like or what the nature of a profession may actually be like or what the nature of a profession may actually be has been associated with student dissatisfaction, low grade achievement, and student attrition. The M. C. G. students' adjustments toward more realistic assessments concerning their attitudes about the occupation as evidenced in the post-test data would be seen to offer several implications for the study of professionalization. Not the least of these implications may be--Is academic performance related to high degrees of contact with dentistry, dental students, and dental faculty? Is satisfaction and achievement associated with lower degrees of misperceptions regarding the occupation? Also of interest would be how the adjustments of inaccurate expectancies are accomplished and if the students' early clinic experiences function to modify discrepant role definitions and if so how?

In summary, this paper has sought to provide a social-psychological analysis of the attitudinal perspectives of dental students, how they comprise a subjective set of orientations toward their educational experience, and how these attitudes changed over a year's time. The data collected in this study have generated several questions of particular interest for the field of education. The issues posed by these questions may serve to bring into sharper focus the essential elements within the process of dental education and to provide investigative guidelines for future research in the area of professionalization.

TABLE I

Mean Rank Order of Projected Self Rating From Dental Student to Dentist for Self and Others by Freshmen Dental Students at the Beginning and the End of the First School Year*

| RATING CATEGORIES | RESPONSES | Pre-test $\bar{X}$ | Post-Test $\bar{X}$ |
|---|---|---|---|
| 1. Where would you place yourself at this time? | | 1.173 | 3.047 |
| 2. Where do you think that the MCG faculty now sees you? | | 1.173 | 2.739 |
| 3. Where do you think your non-dental friends and acquaintances now see you? | | 1.565 | 4.318 |
| 4. Where do you think your parents now see you? | | 1.821 | 3.565 |
| 5. Where do you think patients in the MCG Dental school clinic will see you when you start working in the clinic? | | 4.608 | 6.695 |
| | N = 23 | | |

*Data derived from the following question: "Below is a line representing an arbitrary distance between a dental student and a dentist."

Dental Student 1 2 3 4 5 6 7 8 9 10 Dentist

**Source: All of the data presented in Tables I - V were derived from questionnaires administered on September 2, 1969 and May 28, 1970.

TABLE II

Mean Rank Order of the Characteristics of Other Freshmen Dental Students As Perceived by Freshmen Dental Students at the Beginning and the End of the First School Year*

| STUDENT CHARACTERISTIC | RESPONSES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Practically All of Them | | A Majority of Them | | A Minority of Them | | Practically None of Them | | Pre-test $\bar{X}$ | Post-test $\bar{X}$ |
| | Pre-test N | Post-test N | Pre-test N | Post-test N | Pre-test N | Post-test N | pre-test N | Post-test N | | |
| 1. High intellectual ability | 15 | 11 | 8 | 12 | -- | -- | -- | -- | 1.348 | 1.521 |
| 2. Honesty and integrity in academic matters | 15 | 13 | 8 | 10 | -- | -- | -- | -- | 1.348 | 1.436 |
| 3. A desire to make money | 14 | 19 | 9 | 4 | -- | -- | -- | -- | 1.391 | 1.173 |
| 4. Determined to become a dentist | 14 | 18 | 9 | 5 | -- | -- | -- | -- | 1.391 | 1.217 |
| 5. High Moral and ethical standards in general | 14 | 11 | 9 | 9 | -- | 3 | -- | -- | 1.391 | 1.652 |
| 6. High interest in dentistry | 13 | 10 | 10 | 12 | -- | 1 | -- | -- | 1.435 | 1.608 |
| 7. A desire to know things | 14 | 10 | 8 | 11 | 1 | 2 | -- | -- | 1.478 | 1.652 |
| 8. A desire to help people | 1 | 3 | 12 | 18 | 9 | 1 | 1 | 1 | 1.478 | 2.000 |
| 9. Mature and adult in personal behavior and mannerisms | 13 | 3 | 9 | 18 | 1 | 2 | -- | -- | 1.478 | 1.956 |
| 10. Good manual dexterity and skill | 8 | 4 | 15 | 16 | -- | 3 | -- | -- | 1.652 | 1.956 |

(continued)

TABLE II
(continued)

| | PA | | MAJ | | MIN | | PN | | Pre-test $\bar{X}$ | Post-test $\bar{X}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Pre-test N | Post-test N | Pre-test N | Post-test N | Pre-test N | Post-test N | Pre-test N | Post-test N | | |
| 11. Enjoy dental school | 7 | 5 | 15 | 11 | 1 | 6 | -- | 1 | 1.739 | 1.956 |
| 12. Artistic sense and skills | 1 | 2 | 5 | 12 | 14 | 9 | 3 | -- | 1.826 | 2.304 |
| 13. An interest in national politics and world affairs | 4 | 1 | 14 | 18 | 5 | 4 | -- | -- | 2.043 | 2.130 |
| 14. An interest in art, music, and literature | 4 | 1 | 9 | 10 | 10 | 10 | -- | 1 | 2.261 | 2.500 |
| 15. An interest in philosophical questions and issues | 4 | -- | 11 | 12 | 6 | 10 | 2 | 1 | 2.261 | 2.521 |

N = 23

*Data derived from the following question: "To what extent do you anticipate that the OTHER freshmen students in your class will have the following characteristics?"

TABLE III

Mean Rank Order of Activities Dental Instructors Should or Should Not Do in Courses as Perceived by Freshmen Dental Students at the Beginning and the End of the First School Year*

| ACTIVITIES INSTRUCTORS SHOULD OR SHOULD NOT DO | RESPONSES | | | | | |
|---|---|---|---|---|---|---|
| | Should | | Should Not | | Pre-test $\bar{X}$ | Post-test $\bar{X}$ |
| | Pre-N | Post-N | Pre-N | Post-N | | |
| 1. Make an effort to become personally acquainted insofar as that is possible with students in their courses. | 22 | 23 | 1 | -- | 1.043 | 1.000 |
| 2. Give detailed guidance on what students should emphasize in studying. | 19 | 22 | 4 | 1 | 1.174 | 1.043 |
| 3. Grade on performance rather than on effort. | 11 | 17 | 10 | 6** | 1.347 | 1.260 |
| 4. Discuss in detail in the classroom their own research. | 13 | 3 | 10 | 20 | 1.435 | 1.869 |
| 5. Maintain strict control over classroom procedures and discussions. | 9 | 8 | 14 | 14 | 1.609 | 1.636 |
| 6. Lecture more or less directly from the text of the course. | 9 | 8 | 14 | 15 | 1.609 | 1.652 |

N = 23

*Data derived from the following question: "To what extent do you think that the instructors you will have in courses in dental school should or should not do the following things?"

**Responses contain two blanks; mean based on 21.

TABLE IV

Mean Rand Order of the Characteristics of a Good Dentist as Perceived by Freshmen Dental Students at the Beginning and the End of the First School Year*

| GOOD DENTIST CHARACTERISTICS | RESPONSES | | | | | | | | Pre-test $\bar{X}$ | Post-test $\bar{X}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Very Important | | Moderately Important | | Slightly Important | | Not Important | | | |
| | Pre- N | Post- N | Pre- N | Post- N | Pre- N | Post- N | Pre- N | Post- N | | |
| 1. High ethical standards | 18 | 20 | -- | -- | -- | -- | -- | 1 | 1.217 | 1.217 |
| 2. Strong dedication to dentistry | 19 | 12 | 1 | -- | 1 | -- | -- | 2 | 1.217 | 1.652 |
| 3. Ability to handle people | 16 | 21 | -- | -- | -- | -- | -- | -- | 1.304 | 1.086 |
| 4. Recognition of own limitations | 17 | 22 | 1 | -- | 1 | -- | -- | -- | 1.304 | 1.043 |
| 5. Getting real enjoyment out of dentistry | 16 | 17 | 1 | 1 | 1 | 1 | -- | 1 | 1.348 | 1.478 |
| 6. Good manual dexterity | 14 | 14 | -- | 1 | -- | 1 | -- | -- | 1.391 | 1.434 |
| 7. Emotional stability | 13 | 17 | -- | -- | -- | -- | -- | 1 | 1.435 | 1.347 |
| 8. Good technical skills | 13 | 16 | -- | -- | -- | -- | -- | -- | 1.435 | 1.304 |
| 9. Skillful management of time | 13 | 19 | -- | -- | -- | -- | -- | 1 | 1.435 | 1.260 |
| 10. Scientific curiosity | 9 | 10 | 2 | 2 | 2 | 2 | -- | 2 | 1.696 | 1.826 |
| 11. Good business sense | 8 | 11 | 2 | 2 | 2 | 2 | -- | -- | 1.739 | 1.608 |

(Continued)

TABLE IV
(continued)

| | VI | | MI | | SI | | NI | | Pre-test $\bar{X}$ | Post-test $\bar{X}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Pre-N | Post-N | Pre-N | Post-N | Pre-N | Post-N | Pre-N | Post-N | | |
| 12. High intellectual ability | 9 | 6 | 13 | 13 | 1 | 2 | -- | 2 | 1.783 | 2.000 |
| 13. Dignified appearance and mannerisms | 7 | 10 | 11 | 8 | 3 | 5 | 2 | -- | 2.000 | 1.782 |
| 14. Outgoing and extrovert personality | 5 | 3 | 13 | 8 | 5 | 6 | -- | 3 | 2.000 | 2.450 |
| 15. Good research ability | 2 | 2 | 9 | 4 | 12 | 11 | -- | 6 | 2.435 | 2.913 |
| 16. Interest in writing professional articles | 1 | 1 | 6 | 6 | 11 | 7 | 5 | 9 | 2.870 | 3.130 |

N = 23

*Data derived from the following question: "In your opinion, which of the following characteristics are important to have to be a good dentist?"

TABLE V

Mean Rank Order of the Disadvantages of Dentistry as Perceived by Freshmen Dental Students at the Beginning and the End of the First School Year*

| DISADVANTAGES OF DENTISTRY | RESPONSES | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Strongly Agree | | Moderately Agree | | Slightly Agree | | Not at all a Disadvantage or Unfavorable | | Pre-test X | Post-test X |
| | Pre- N | Post- N | Pre- N | Post- N | Pre- N | Post- N | Pre- N | Post- N | | |
| 1. The heavy cost of initial investment in setting up the practice. | 5 | 9 | 8 | 5 | 5 | 7 | 5 | 2 | 2.435 | 2.086 |
| 2. The potential hazards to health involved. | -- | 5 | 9 | 3 | 8 | 9 | 6 | 6 | 2.870 | 2.695 |
| 3. The lack of appreciation by patients of the non-mechanical skills of the dentist. | 2 | 5 | 3 | 5 | 8 | 12 | 10 | 1 | 3.130 | 2.391 |
| 4. The physically demanding hard work involved in standing for a long time, etc. | 1 | 5 | 3 | 3 | 11 | 6 | 8 | 9 | 3.130 | 2.391 |
| 5. The working alone without colleagues | -- | 3 | 5 | 1 | 7 | 9 | 11 | 10 | 3.261 | 2.739 |
| 6. The thinking by people that the dentist is not much more than a mechanic. | -- | 4 | 5 | 7 | 7 | 10 | 11 | 2 | 3.261 | 2.434 |
| 7. The absence of variety and the repetitious nature of the work of the general practitioner. | 1 | -- | 2 | 6 | 6 | 6 | 14 | 11 | 3.435 | 3.217 |

(continued

TABLE V
(continued)

| | St.A. | | M.A. | | Sl.A. | | Not.Dis. | | Pre-test | Post-test |
|---|---|---|---|---|---|---|---|---|---|---|
| | Pre- N | Post- N | Pre- N | Post- N | Pre- N | Post- N | Pre- N | Post- N | X | X |
| 8. The lack of opportunity to make a contribution to basic knowledge. | -- | 2 | 3 | 2 | 6 | 3 | 14 | 16 | 3.478 | 3.434 |
| 9. The impossibility of attaining a tremendous income as in some other fields. | -- | 1 | 1 | 3 | 5 | 6 | 17 | 13 | 3.696 | 3.347 |
| 10. The fact that the total responsibility for the work done is solely that of the dentist himself. | -- | -- | 2 | 3 | 2 | 6 | 19 | 14 | 3.739 | 3.478 |
| 11. The having to inject needles into people. | -- | -- | -- | -- | 5 | 3 | 18 | 20 | 3.783 | 3.869 |
| 12. The working in a "dirty part" of the body. | -- | -- | -- | 2 | 4 | 8 | 19 | 13 | 3.826 | 3.478 |
| 13. The necessity of working around blood. | -- | -- | -- | 2 | 3 | 7 | 2 | 14 | 3.970 | 3.521 |
| 14. The working with people rather than just physical objects. | -- | 1 | 1 | -- | 2 | 2 | -- | 20 | 3.913 | 3.739 |

N = 23

*Data derived from the following question: "Below are some things that have been suggested as possible disadvantages or unfavorable aspects of being a dentist. Indicate the extent you agree or disagree that they are disadvantages."

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